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APRIL 5.

Mr. THOMAS MEEHAN, Vice-President, in the chair.

Fifty-three persons present.

APRIL 12.

The President, General ISAAC J. WISTAR, in the chair.

Forty-five persons present.

APRIL 19.

The President, General ISAAC J. WISTAR, in the chair.

Thirty-one persons present.

APRIL 26.

The President, General ISAAC J. WISTAR, in the chair.

Sixty-five persons present.

A paper entitled "On the Mechanical Genesis of the Scales of Fishes," by John A. Ryder, was presented for publication.

Prof. F. H. Giddings was elected a member.

On the Molars of the Pteropine Bats.—DR. HARRISON ALLEN called attention to the homologies of the cusps of the molars in the pteropine bats. In *Pteropus medius* the grinding surface of the parallelogram-like crown of the first upper molar is traversed its entire length by a groove which is bounded externally by a thick ridge and internally by a narrow ridge. The outer ridge forms an imperfectly developed cusp at its anterior part which is probably the paracone. The inner ridge is imperfectly divided into two sub-equal parts, of which the anterior is probably the protocone and the posterior the metacone, the heel (hypocone) being absent. These identifications agree with the cusps as seen in other mammals. Owing to the great size of the grinding surface it becomes difficult to understand why the backward extension of the tooth differs from other types in the form of the primary cusps instead of the evolution occurring as is the rule by the appearance of the hypocone.

The commissure which constitutes the anterior and the posterior borders of the tooth are exceptionally well defined and the one last

named appears to take the place by adaptation of the region of the hypocone.

A recent observation on *Cephalotes* has suggested to the recorder that it is probable that the hypocone is really present and that the greater part of the grinding surface may be so named. In this genus the parts protocone, paracone and metacone can be easily discerned. The protocone according to this identification compels one to accept the cusp named as protocone as in truth the metacone, and thus the usual elements of a tritubercular tooth are all accounted for, and the remaining extended part of the tooth becomes the hypocone.

By this identification the pteropine molar ceases to be aberrant. But it must be remembered that the process of reduction of the face which takes place in the pteropines is likely to be accompanied with the same disposition to tooth variation as is seen in the Stenoderms among the *Phyllostomidae*. In this family the molar teeth are highly aberrant and the commissures at the anterior and posterior borders greatly developed. The question naturally arises why may not the molar in *Cephalotes* be acknowledged to be also aberrant and the cusp named above the protocone be in reality nothing but a supplemental cusp projected from the anterior commissure and the parts as defined for the long faced *Pteropus* be true for all genera? On the whole Dr. Allen inclined to the opinion that the statement first made was the correct one since it permitted the cusps to be named with the least amount of violence to accepted views.

The first molar in both *Cephalotes* and the related *Harpyia* closely resembles the last premolar, so closely indeed as to suggest that it may prove to be one of the premolar series. But our knowledge of the milk dentition does not permit this identification to be made with certainty. The transition in all the details is certainly much more gradual than is usually the case between a molar and a premolar. In *Harpyia* at least the first molar as defined in accepted descriptions lies under and slightly in advance of the infra-orbital foramen, a remarkable position for it when the greatly reduced facial axis is borne in mind.

A striking peculiarity is seen in the last upper premolar and both upper molars of *Cephalotes* in the presence of a longitudinal ridge on the grinding surface of the tooth back of the paracone. The ridge lies in the middle of the tooth. It is rudimental in the premolar and the last molar but is trenchant in the first molar.

In the lower jaw of *Cephalotes* the teeth present similar peculiarities to those of the upper with the exception that the longitudinal ridge is absent from the last premolar, is rudimental in the first and last molar but well developed in the second. The single specimen of *Cephalotes* examined was a young adult and the premaxillaries were united.

The following were ordered to be printed:—